

TA 50-37



GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
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SECRETARY  
EDGAR T. THORNTON, III  
DEPUTY SECRETARY

CERTIFIED RETURN RECEIPT REQUESTED  
NOTICE OF MODIFICATION CLASS DETERMINATION

April 17, 1995

Mr. Larry Kirkman  
DOE/LAAO  
528 35th Street  
Los Alamos, New Mexico  
87545

Dear Mr. Kirkman:

The New Mexico Environment Department has completed a Class Determination Review of requested Permit Modifications concerning the Controlled Air Incinerator (CAI) located in TA-50 Building 37. There are five (5) enclosures:

**Enclosure 1** is a copy of the Permit Modification Fee Worksheet. This worksheet shows how NMED arrived at the total fee for the modifications requested.

**Enclosure 2** contains a list of modifications used to calculate the fees as described in Enclosure 1. These modifications were described by LANL as "Proposed Modifications to the LANL RCRA Hazardous Waste Operating Permit for Mixed Waste Operations at the Controlled Air Incinerator". NMED has added one State initiated modification for which there is no fee. This list also contains modifications that NMED has determined were "improperly classified" by LANL as "Changes, Upgrades, -Maintenance to the LANL Controlled-Air Incinerator." exempt due to "normal maintenance".

**Enclosure 3** contains requested modifications that no determination could be made due to lack of information. Information required to make a determination must be submitted within ten (10) working days of the receipt of this notice. Failure to submit the information within ten (10) working days may result in the modification being denied or further enforcement action.

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**Enclosure 4** is the class determination for the modifications to the CAI described in the Kaiser Report reflected in the revised Part B Application.

**Enclosure 5** contains other modifications made to the CAI identified by LANL as "Changes, Upgrades, -Maintenance" to the LANL Controlled-Air Incinerator". These modifications to the CAI are not modifications to the LANL Hazardous Waste Permit but are not considered "normal maintenance" by NMED and are modifications to the CAI under 40 CFR 270.42.

NMED does not agree that LANL is exempt from modification request due to the exception allowed under "normal maintenance" in 53 Federal Register, September 28, 1995. The inactivity of the CAI precludes the use of normal operational maintenance as described in the Federal Register. Modifications that affected the operational monitoring by making that monitoring less stringent than original operational monitoring standards (whether established by NMED or LANL in operational safety) have been determined to be modifications and are included in Enclosure 2.

Within thirty (30) calendar days of the receipt of this Notice of Class Determination LANL must submit the Permit Modification Fees explained in Enclosure 1, two (2) copies of Redline/Strikeout pages indicating the text to be modified, and one (1) software copy of the modifications (redline/strikeout) in IBM Word Perfect 5.1 or equivalent format.

Should you have any questions or concerns about this Notice of Class Determination contact Mr. Robert S. (Stu) Dinwiddie of my staff at the above address or by telephone at (505) 827-4308.

Sincerely,

*Stephanie Kruse*

Barbara Hoditschek  
Program Manager, RCRA Permits  
HRMB

cc:  
Benito Garcia, Bureau Chief HRMB  
Barbara Hoditschek  
Robert S. (Stu) Dinwiddie  
Red File

ENCLOSURE 1  
Permit Modification Fee Worksheet

Date of Notice: March 30, 1995

Class I Modifications:       \$ 1,000.00       \$ 1,000.00

Class II Modifications:       \$10,000.00       -0-

Class III Modifications:       \$10,000.00       \$10,000.00

Total Due:                   \$11,000.00

Submittal of the indicated fee is required within 30 days of the receipt of this notice. Failure to submit the indicated fee within 30 days may result in a denial of the modification and/or other enforcement action.

**Enclosure 2**  
**NMED CLASS DETERMINATION**  
**Proposed Modifications to the LANL RCRA Hazardous Waste Operating Permit**  
**for**  
**Mixed Waste Operations at the Controlled-Air Incinerator**

<b>Permit Page:</b>	<b>Section</b>	<b>Modification Requested</b>	<b>Class Citation</b>
ATTACHMENT B: B-3	B.2	Change 1st sentence "The waste incinerator system building and Room 117 storage area are routinely" to "The controlled-air incinerator system building and Rooms 117 and 118 storage areas are routinely".	I 40 CFR § 270.42.A.1
B-3	B.2	Change section title "TA-50 Waste Incinerator and Room 117 Storage Area Potential Problems" to "TA-50 Controlled-Air Incinerator and Rooms 115, 117, and 118 Storage Area Potential Problems"	I 40 CFR § 270.42.A.1
B-4	B.2.3	Change "A copy is sent for records to HSE-8 and kept for" to "A copy is sent for records to ESH-19 and kept for"	I 40 CFR § 270.42.A.1
B-6	B.5.1	Change "the TA-50 waste incinerator" to "The TA-50 controlled-air incinerator."	I 40 CFR § 270.42.A.1

Permit Page:	Section	Modification Requested	Class Citation
Attachment D D-12	D.6.1	Add "(unless an electronic badge reader is in use)" after the phrase, "...the secretary will remove the personnel attendance roster that is located near the secretary's desk..."	I 40 CFR § 270.42.A.1
Table		Under the first column, change "TA-50-37 Room 117 Storage Area" to "TA-50-37 Rooms 117 and 118 Storage Areas".	I 40 CFR § 270.42.A.1
Attachment J J-5	J.2.6.1	Fifth Paragraph, add "Rooms 117 and 118 are drained to the sump in Room 112 manually, if necessary".	I 40 CFR § 270.42.A.1
J-5	J.2.6.2	First Paragraph, Delete "Selected controls and instrument readouts are also located in the incinerator main control panel and the liquid burner station at the incinerator".	I 40 CFR § 270.42.A.1
J-6	J.2.6.3.2	Add after the word "timer", "or a programmable logic controller".	I 40 CFR § 270.42.A.1

Permit Page:	Section	Modification Requested	Class	Citation
Attachment J (continued):				
J-7	J.3.4	Change "HSE-7 maintains a safety" to CST-27 maintains a safety". Change "inspections of all HSE-7 facilities" to "inspections of all CST waste management facilities". Change "A representative of HSE-3, Industrial Safety, is an ad hoc member" to "A"	I	40 CFR § 270.42.A.1
J-7	J.3.5.1	Change "Each person assigned to TDF operations receives a copy of" to "Each person assigned to TDF operations has access to a copy of".	I	40 CFR § 270.42.A.1
J-7	J.3.5.2	Change Section Title "Standard Operating Procedures" to "Safe Operating Procedures"	I	40 CFR § 270.42.A.1
J-7	J.3.5.2	Change "Standard Operating Procedures" to "Safe Operating Procedures", change "revisions to the HSE Division SOP Committee" to "revisions to the ESH Division SOP Committee".	I	40 CFR § 270.42.A.1

Permit Page:	Section	Modification Requested	Class Citation
Attachment J (continued):			
J-8	J.3.5.3	Change Paragraph... "The building manager...SWPs" to "The appropriate disciplines in Facilities Engineering (ENG-5), Health Physics Operations (ESH-1), Facility Risk Management (ESH-3). and Industrial Hygiene and Safety (ESH-5) review the SWPs."	I 40 CFR 270.42.A.1
J-8	J.3.5.4	Change Section title "Operating instructions" to Detailed Operating Procedures".	I 40 CFR § 270.42.A.1
J-8	J.3.5.4	Change Paragraph "Operating Instructions (OIs)" to "Detailed Operating Procedures (DOPs)". add "and/or review" after "Members of the engineering staff". Change "OIs" to "DOPs". Change "section" to "Group".	I 40 CFR § 270.42.A.1
Module III			
III-1	2	Change "c. Containers may be stored within storage Room 117 of the Controlled-Air Incinerator" to "c. Containers may be stored within storage Rooms 117 and 118 of TA-50-37".	I 40 CFR § 270.42.A.1

Permit Page:	Section	Modification Requested	Class	Citation
Module III (continued):				
III-3	3	Change section e. "...stored in Building 50-37, Room 117" to "...stored in Building 50-37, Rooms 117 and 118 combined".	I	40 CFR § 270.42.A.1
Module V	Figure 8	Update Figure 8, CAI Process Diagram, to reflect changes to the pollution control equipment train.	I	40 CFR § 270.42.A.1
7	V.F.9.	Modification of the radioactivity monitoring requirement to allow for the treatment of mixed waste.		This modification would require the modification of three (3) conditions of the permit. Condition V.F.9.a. <b>Class II</b> , in. re: 40 CFR § 270.42.L.4. Condition V.F.9.b. <b>Class II</b> in. re: 40 CFR § 270.42.1.4. and; Condition V.F.10.a. <b>Class III</b> in.re: 40 CFR § 270.42.F.10.a.
10	V.I.5.b.	Change "EID" to "NMED"		This modification was made in the January 30, 1995 modifications to the Los Alamos Hazardous Waste Permit.

Permit Page:	Section	Modification Requested	Class Citation
Module V (continued):			
11	V.J.3.	To clarify the intent of the permit condition, insert "either" after "may be".	This modification was made in the January 30, 1995 modifications to the Los Alamos Hazardous Waste Permit.
5	V.F.1.	Change title "Total Chloride Content" to "Total Chlorine Content".	I 40 CFR § 270.42.A.1
6	V.F.6.b	Change text from "...control with either sodium hydroxide or potassium hydroxide to a pH range above 1.0 ± 3%" to "...controlled with either sodium hydroxide, potassium hydroxide, or magnesium chloride to pH range above 1.0."	I 40 CFR § 270.42.A.1
7	V.F.10.	Change section title "Automatic Shutdown" to "Automatic Waste Feed Cutoff".	I 40 CFR § 270.42.A.1
7	V.F.10.a.	Change "shutdown" to "discontinued"	I 40 CFR § 270.42.A.1
7	V.F.10.b.	Change "automatic shutdown" to "automatic waste feed cutoff"	I 40 CFR § 270.42.A.1

**Permit**

**Page:**

Module V

8

**Section**

(continued):

V.G.1.

**Modification Requested**

Change "Ash resulting from a listed waste burn shall be cemented and disposed of off site as a hazardous waste." to "Ash resulting from a listed waste burn shall be stabilized or vitrified as defined by 40 CFR § 268.42, Table 1, and disposed of off site a"

**Class Citation**

I 40 CFR § 270.42.A.1

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V.H.4.

Change section title "Automatic Cutoff" to "Automatic Waste Feed Cutoff".

I 40 CFR § 270.42.A.1

Request for modification to allow mixed waste operations at the CAI.

II 40 CFR § 270.42.L.2.  
Increase in metals  
up to 25%.

<b>Permit</b>			
<b>Page:</b>	<b>Section</b>	<b>Modification Requested</b>	<b>Class Citation</b>

**STATE INITIATED MODIFICATIONS:**

Module I 6	I.D.10.	NMED will add language to Condition I.D.10. that states "The Permittee will notify NMED within seven (7) calendar days of maintenance replacement or upgrade of the CAI.	I 40 CFR § 270.42.A.4.a. Though there is no monitoring requirement in the permit the operational monitoring has altered (decreased) from the original monitoring required by LANL.
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**OTHER MODIFICATION THAT NEW MEXICO has determined a Class different than LANL.**

Module I 6	I.D.10.	Combustion Air Glovebox face removed to accommodate the new valve size changes in this glovebox.	II 40 CFR § 270.42.A.4.b. This is a decrease in what was established as normal operation monitoring of a parameter required by LANL.
6	I.D.10.	Integrated Glovebox-Operated Robotics System added for the hearth sweep-out and inspection of PCC, SCC and main duct added.	II 40 CFR § 270.42.A.4. Change in procedure not a result of "normal maintenance" but is an equipment upgrade.
6	I.D.10.	Removal of combustion gas monitor in the combustion gas glovebox, due to removal of the glovebox front.	II 40 CFR §270.42.A.4.b This is a decrease in what was established as normal operational monitoring of a parameter required by LANL.

Permit Page: Module I	Section	Modification Requested	Class Citation
6	I.D.10.	Replacement of mechanical process recorders and controllers with multipoint digital controllers.	II 40 CFR § 270.42.A.4.b. Replacement of the controller with multipoint digital controllers does not indicate the process recorders have been replaced with a newer software controlled recording system. This is a decrease in the frequency of monitoring reporting and a change in recordkeeping.
6	I.D.10.	Main ram glovebox air supply HEPA replaced by direct piping of combustion air to the underfire air blower.	II 40 CFR § 270.42.L.5. Modification of operating condition and the PCC.
6	I.D.10.	Multiple Energy Gamma Assay System (MEGAS) for SNM assay replaced with Multiple Axis Dual Analysis System (MADAM) system. Also the MADAM and waste package X-Ray systems have been moved from the waste feed glovebox.	II 40 CFR § 270.42.B.1.d. Change in waste sampling and analysis methods.

Permit  
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6

Section  
I.D.10.

**Modification Requested**

Possible changes to stack-gas I  
sampling train to comply with  
NESHAPS sampling requirements.

**Class Citation**

40 CFR § 270.42.A.4.a.  
NESHAPS monitoring may  
not be explicitly required  
in the Permit however LANL is  
bound by regulations to comply  
with those standards. This is  
therefor a change in the  
sampling/monitoring by  
increasing frequency of  
sampling/monitoring.

6

I.D.10.

Possible addition of offgas I  
superheater drain valve,  
in order to drain off  
accumulated condensation for  
the prevention of internal  
corrosion of the unit.

40 CFR § 270.42.A.3.  
Equipment upgrade by  
addition of previously  
non-existent drain valve.

ENCLOSURE 3  
MODIFICATIONS NOT MADE  
DUE TO A LACK OF INFORMATION.

Modifications described in this list were not made due to a lack of information. Description of information required to make a class determination is found to the right of the modification requested. All information concerning the modifications in this list are required within ten (10) working days of the receipt of this notice.

Permit Page:	Section	Modification Requested	Information Required
Attachment B B-7	B.5.1.	Update the list of emergency communication equipment. action.	Insufficient information to make a class determination. If the update deletes equipment the Modification is Class II, if equipment is being added the modification is Class I.
B-5	V.F.5.b	Change text from "...1400 degrees Fahrenheit, measured at the hot duct between the Primary and secondary chambers" to "...1400 degrees Fahrenheit, measured at the entrance to the duct connecting the primary and secondary combustion chambers.	A detailed description of this modification is needed to ensure that the location of the sensor is not located in an inappropriate location to provide the required information.

Permit  
Page:

Section

Modification Requested

Information Required

V.E.1

pH meters on the scrub solution recycle line are being moved to new locations to provide better data acquisition and parameter control.

NMED requires a more detailed description of the pH meter new location and validation of the logic for the move.

**ENCLOSURE 4**  
**MODIFICATIONS MADE TO THE CONTROLLED-AIR INCINERATOR PRIOR TO PERMIT**  
**BEING ISSUED AND ARE NOT MODIFICATIONS TO THE HAZARDOUS WASTE PERMIT.**

Modification Made	NMED Class Determination	Regulatory Citation
1. Replacement of Absorption Column packing with structured Hastelloy C-276 Packing. Replacement packing has a higher specific surface area.		40 CFR 270.42.A.3. Modifications listed on this page were made prior to permit issuance. The information provided NMED in the Kaiser Report and therefore not a permit modification even though a Permit Condition may have been affected by the modification of the Incinerator.
2. Change in Absorption Column diameter from 24 inches to 30 inches.		
3. Change in Material Specifications of the Absorption Column from FRP to Hastelloy.		
flow rate from 7 gallons per minute to 20-25 gallons per minute.		
5. The Ash Handling system modified from a vacuum removal and conveyance system to a gravity dropout and removal system.		
6. Modification of the CAI Building by constructing an Ash Pit to accommodate the gravity ash drop out and removal system. Pit has been constructed under the primary combustion chamber.		

Modification Made	NMED Class Determination	Regulatory Citation
7. CAI Building has been modified by expansion constructing new exhaust fan joints to replace deteriorated joints.		40 CFR 270.42.A.3. Modifications listed on this page were made prior to permit issuance. The information provided NMED in the Kaiser Report and therefore not a permit modification even though a Permit Condition may have been affected by the modification of the Controlled-Air Incinerator.
8. CAI Building has been modified by replacement of the existing evaporative cooler with a mechanical chiller system. Ventilation control upgrades including new PLC based data acquisition and connection to main CAI control room for process area, high bay, and storage bay exhaust system.		
9. Move the Demister closer to the absorber column and replace with Hastelloy unit.		
10. Addition of a heat exchanger to scrub recycle.		
11. Material and size change on existing process liquid heat exchanger.		
12. Second stage HEPA filter bank duplicated with the addition of a parallel filter plenum.		

Modification Made	NMED Class Determination	Regulatory Citation
13. Quench Tower liquid flow rate increased from 24 gallons per minute to 28 gallons per minute.		40 CFR § 270.42.A.3. Modifications listed on this page were made prior to permit issuance. The information provided NMED in the Kaiser Report and therefore not a permit modification even though a Permit Condition may have been affected by the modification of the Controlled-Air Incinerator.
14. Quench Tower lower nozzles replaced with Hastelloy C-22 alloy nozzles and are reoriented.		
15. Overflow weir replaced with spray nozzles.		
16. All Quench Tower gaskets replaced with Viton gaskets; all plug valve liners replaced with Teflon liners.		
17. Relocation of the stack gas superheater closer to the absorber column.		
18. Venturi Scrubber material changed from FRP to Hastelloy.		
19. Venturi Scrubber flow restriction orifice liner changed from Hypalon to Viton.		
20. Redesign and replacement of HEPA filter housing by placing filters in separate individually accessible enclosures.		

Modification Made	NMED Class Determination	Regulatory Citation
21. Movement of the venturi exit cone from axial to tangential alignment with the absorber column.		40 CFR § 270.42.A.3. Modifications listed on this page were made prior to Permit issuance. The information provided NMED in the Kaiser Report and therefore not a permit modification even though a Permit Condition may have been affected by the modification of the Controlled-Air Incinerator.
22. Venturi liquid injection orifice increased in size from 1/4" to 3/8".		
23. Quench Tower material changed from FRP to Hastelloy.		
24. Venturi Scrubber increase in liquid flow rate from 5 gallon per minute to 10 gallon per minute.		
25. Increase offgas pressure drop through the venturi from 40 inches H <sub>2</sub> O to 60 inches H <sub>2</sub> O by restricting the variable venturi throat opening.		
26. Removal of primary combustion chamber gas-fired lower burner, because of the addition of the liquid injection vortex burner.	Should have been Class III	40 CFR § 270.42.L.3. "Changing other features of the incinerator...that could affect the unit's capability to meet the regulatory performance standard."

**Modification Made**

**NMED Class  
Determination**

**Regulatory  
Citation**

27. The height intensity vortex liquid burner will be enclosed in a glovebox to provide containment when servicing the component. Due to space limitations, the burner must be altered from the original design. The new burner has been specified to function exactly as the former burner design, and testing and third-party verification of equipment performance will be performed and provided.

Should have  
been  
Class III

40 CFR § 270.42.L.3.  
"Changing other features of the incinerator...that could affect the unit's capability to meet the regulatory performance standard."

ENCLOSURE 5  
MODIFICATIONS MADE TO THE CONTROLLED AIR INCINERATOR AFTER THE PERMIT  
WAS ISSUED THAT LANL CLAIMS WERE NORMAL MAINTENANCE.

Modification Made	NMED Class Determination	Regulatory Citation
1. CAI Building has been modified structurally to withstand a more intense design earthquake.	None	The CAI Building is not a permitted structure/unit. This change is not a Permit Modification.
2. Combustion Air Chamber Blowers replaced with flagged units of the same type to allow for the addition of HEPA Filters to the flange.	Should have been Class I	40 CFR § 270.A.3. This upgrade is not related to "normal maintenance" this is an equipment upgrade.
3. Replacement of Combustion Air and Natural Gas flow indicators (hot wire anemometers) with venturi flow tubes and foxporo flow totalizers.	Should have been Class I	40 CFR § 270.42.A.3. Functional equivalent upgrade

Modification Made	NMED Class Determination	Regulatory Citation
4. Third Stage HEPA to be moved and housing replaced with 316L stainless steel.	None	NMED understands that this is a physical relocation of the housing that does not alter the original design or operational flow chart.
5. A new uninterruptible power supply and new transfer switching equipment have been installed to replace aging battery packs.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade not related to "normal maintenance" as related in 53 FR, Sept. 28, 1988.
6. Addition of lead-lag logic control for fuel-to air ratio control to compensate for sluggish air supply responses versus rapid fuel supply response.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade not related to "normal maintenance" as related in 53 FR, Sept. 28, 1988.
7. Addition of a control loop to compensate for changes in the liquid waste supply which will adjust for differing liquid waste combustion air requirements.	Should have been Class I	40 CFR § 270.42.A.3. Equipment not on original design. This is a modification to the controls that should enhance performance.
8. Removal of mechanical linkage control of fuel and combustion air so these may be controlled independently and automatically.	Should have been Class I	40 CFR § 270.42.A.3. System upgrade to enhance performance.

Modification Made	NMED Class Determination	Regulatory Citation
9. Addition of control loop relating liquid waste feed to equivalent natural gas feed rate. Will ensure that neither heat capacity nor combustion air capacity of burner is exceeded. (previously performed manually.)	Should have been Class I	40 CFR § 270.42.A.3. Not normal maintenance upgrade by improving controls to enhance performance.
10. Replacement of O <sub>2</sub> monitors in the primary and secondary combustion chambers. The RCRA Operating Permit requires monitoring of upper (secondary) chamber oxygen.	None	Functional equivalent replacement during maintenance to comply with permit condition.
11. Change in offgas pressure control valve control logic from feedback to feed forward-based control.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade.
12. Replacement of mechanical relay-based control logic with a Programmable Logic Controller (PLC). The PLC will control some of the critical system interlocks and provide data acquisition.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade.

Modification Made	NMED Class Determination	Regulatory Citation
13. Replacement of control valves on the combustion air and natural gas supply lines with new control valves.	None	NMED agrees that this is normal maintenance. Even though the CAI has not been operating, change in size of the gas supply line makes valve replacement necessary.
14. Natural gas supply line has been upgraded to 1.5 inches. A new meter was installed. An earthquake shutoff valve may be added.	None	The gas supply line is not a regulated piece of equipment.
15. A conductivity meter has been installed on the secondary cooling water loop to detect breakthrough or leaking from the scrub system.	Should have been Class I	40 CFR § 270.42.A.3. The Conductivity meter has been added where one did not previously exist. Therefore this is the addition of new equipment (upgrade) and not a normal maintenance replacement.
16. New gyroscopic/coriolis mass flow meter installed on the liquid feed line to provide instantaneous readings of liquid waste flow to the high intensity vortex burner.	Should have been Class I	40 CFR § 270.42.A.3 Equipment upgrade to match the new burner feed requirements.

Modification Made	NMED Class Determination	Regulatory Citation
17. Entire electrical system rewired to separate high voltage and low voltage instrument wiring in order to eliminate induced signals.	Should have been Class I	40 CFR § 270.42.A.3. This is an equipment upgrade that should not have been necessary. Information about induced signals from high voltage conductors into low voltage conductors was known at the time the CAI was constructed. Admission of the possibility of induced signals brings to question the validity of monitoring information from the trial burn conducted during the permitting process.
18. A venturi flowmeter with mass calculator was added to the main ram glovebox to measure air inleakage into the incinerator during box feed operations and during liquid feed operations.	Should have been Class I	40 CFR § 270.42.A.4.a. Addition of a monitor that was previously non-existent is a modification.
19. Flow meters on the scrub solution recycle system have all been replaced with gyroscopic/coriolis mass flowmeter.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade.

<b>Modification Made</b>	<b>NMED Class Determination</b>	<b>Regulatory Citation</b>
20. Individual differential pressure gauges added to each HEPA filter to detect blinding and breakthrough. Formerly, pressure drop was measured across the filter plenum not individual filters.	Should have been Class I	40 CFR § 270.42.A.4.a. Addition of monitoring equipment that will make monitoring more frequent.
21. Instrument air compressor replaced by Ingersoll Rand duplex compressor specifically designed for instrument air systems.	Should have been Class I	40 CFR § 270.42.A.3. This type of compressor was available during construction of the CAI. This is an equipment upgrade.
22. Addition of neutron monitors in the CAI process area, external to the CAI process volume.	Should have been Class I	40 CFR § 270.42.A.4.a. To provide more frequent monitoring. Not required by RCRA Permit.
23. Addition of offgas continuous alpha-beta monitor, for compliance with the RCRA Permit Monitoring Requirement.	None	This is in response to a "compliance condition" in the Permit.
24. Addition of an offgas CO/CO <sub>2</sub> /H <sub>2</sub> O monitor to comply with the RCRA Permit Monitoring Requirements for CO monitoring.	None	This is in response to a "compliance condition" in the Permit.

Modification Made	NMED Class Determination	Regulatory Citation
25. Addition of an offgas NO/NO <sub>x</sub> /SO <sub>2</sub> monitor. There is no RCRA Permit Monitoring Requirement for this monitor.	Should have been Class I	40 CFR § 270.42.A.4.a. There is no RCRA Permit requirement for these parameters. These parameters are required to be monitored in the new "National Combustion Strategy".
26. Addition of an offgas total hydrocarbon monitor to comply with the RCRA Permit Monitoring Requirements.	None	This is in response to a "compliance condition" in the Perm,it.
27. Replacement of the carbon adsorbed unit with a redesigned, dual-pass annular design unit constructed of Hastelloy C-22 and AL-6XN. Performance of the replacement unit has been modeled and determined to be functionally superior to the old unit.	Should have been Class I	40 CFR § 270.42.A.3 Equipment upgrade with a part that the efficiency of has not been verified.
28. Addition of flow straighteners downstream of the HEPA bank and between the I.D. blowers and offgas flow meter.	Should have been Class I	40 CFR § 270.42.A.3 Straightening of the air flow stream may affect the ability of the HEPA filters to do their job.

<b>Modification Made</b>	<b>NMED Class Determination</b>	<b>Regulatory Citation</b>
29. Replacement of sampling trombone with identical unit constructed of AL-6XN.	Should have been Class I	40 CFR § 270.42.A.3. Replacement with an identical unit that is subsequently modified in modification #36.
30. Added expanded sampling duct section on the sampling trombone and stack.	Should have been Class I	40 CFR § 270.42.A.3.
31. Change in offgas ducting not otherwise mentioned with ducts constructed of AL-6XN, in addition to minor rerouting.	Should have been Class I	40 CFR § 270.42.A.3. Unspecified "offgas duct" this is a request for "blanket authorization" to modify offgas ducts.
32. Replacement of all process pumps. New pumps contain Hastelloy wetted parts. All units are sealless technology.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
33. Existing instrument air supply lines replaced with Duraplus plastic pipe, straightened and consolidated.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
34. Replacement of most pipes not otherwise mentioned with Hastelloy C-267.	Should have been Class I	40 CFR § 270.42.A.3. Unspecified pipe replacement. A request for "blanket authorization to replace any and all pipes.

<b>Modification Made</b>	<b>NMED Class Determination</b>	<b>Regulatory Citation</b>
35. Replacement of water-based feed glovebox fire suppression system with a foam-based system.	Should have been Class I	40 CFR § 270.42.B.6.b. Equipment upgrade
36. Main ram feeder glovebox carbon dioxide fire suppression system added.	Should have been Class I	40 CFR § 270.42.B.6.b. Equipment upgrade
37. Main ram feeder glovebox HEPA filter added.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
38. Replacement of the old feed glovebox with a stainless steel glovebox.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
39. Ram feeder chain-drive mechanism replaced with hydraulic system.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
40. Liquid feed line (½" pipe with threaded fittings) replaced with ½" tubing with "Swagelok" fittings.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
41. Caustic tank replaced with new tank equipment with pre-mixed caustic supply hookups.	Should have been Class I	40 CFR § 270.42.A.3. equipment upgrade

<b>Modification Made</b>	<b>NMED Class Determination</b>	<b>Regulatory Citation</b>
42. Movement of caustic addition line from process sump tank entry point to upstream of the scrubber liquid return pump. This change is to ensure proper mixing of the added caustic and better pH control. The plastic line will also be changed to stainless steel.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
43. Added block valve on quench tower buster pump inlet.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade by addition of previously non-existent valve that was available at time of construction.
44. Added check valve on absorber column makeup water line to prevent backflow.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade by addition of a previously non-existent valve that was available at time of construction.
45. Check valves added to combustion air lines, for prevention of combustion air and combustion gas backflow out of the PCC and SCC.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade by addition of a previously non-existent valve that was available at time of construction.

Modification Made	NMED Class Determination	Regulatory Citation
46. 1900 ICFM induced draft blowers replaced with 2200 ICFM I.D. blowers equipped with blower drains. The replaced blowers had corroded significantly and lacked drains.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade during replacement.
47. Addition of variable frequency drives to the induced draft blowers to allow for precise control of draft.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
48. Replacement of tube filters ("dual filters") with hydrocyclone and polypropylene bag filter system.	Should Have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
49. Addition of $1/16$ " perforated screen strainers to hydrocyclone overflow line for the protection of scrub solution recycle pumps down stream of the hydrocyclone.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade
50. Old cooling towers replaced with new identical units.	Should have been Class I	40 CFR § 270.42.A.3. Equipment replacement

Modification Made	NMED Class Determination	Regulatory Citation
51. Molecular sieve dryers added to replace less reliable refrigeration type dryers on instrument air supply compressor. This change is part of the compressor replacement.	Should have been Class I	40 CFR § 270.42.A.3. Equipment upgrade